
PART I - ADMINISTRATIVE

Section 1. General administrative information

Title of project

Create Stream Reference Condition Data Set For The Upper Flathead R Basin

BPA project number: 20144

Contract renewal date (mm/yyyy): ☐ **Multiple actions?**

Business name of agency, institution or organization requesting funding
Flathead National Forest

Business acronym (if appropriate) FNF

Proposal contact person or principal investigator:

Name	<u>Pan Van Eimeren</u>
Mailing Address	<u>Hungry Horse Rd, P.O. Box 190340</u>
City, ST Zip	<u>Hungry Horse, MT 59919</u>
Phone	<u>406 387-3863</u>
Fax	<u>406 387-3889</u>
Email address	<u>pvanetime/rl_flathead@fs.fed.us</u>

NPPC Program Measure Number(s) which this project addresses
10.2B- Watershed Management and 10.3A.13- Habitat Improvement projects

FWS/NMFS Biological Opinion Number(s) which this project addresses

Other planning document references

Short description

Develops reference conditions from various Rosgen channel types to provide baseline data for stream restoration projects and provides a large data set for watershed assessments to determine stream habitat potential.

Target species

Bull trout and westslope cutthroat trout

Section 2. Sorting and evaluation

Subbasin
Flathead

Evaluation Process Sort

CBFWA caucus	Special evaluation process	ISRP project type
Mark one or more caucus	If your project fits either of these processes, mark one or both	Mark one or more categories
<input type="checkbox"/> Anadromous fish <input checked="" type="checkbox"/> Resident fish <input type="checkbox"/> Wildlife	<input type="checkbox"/> Multi-year (milestone-based evaluation) <input checked="" type="checkbox"/> Watershed project evaluation	<input type="checkbox"/> Watershed councils/model watersheds <input type="checkbox"/> Information dissemination <input type="checkbox"/> Operation & maintenance <input type="checkbox"/> New construction <input type="checkbox"/> Research & monitoring <input checked="" type="checkbox"/> Implementation & management <input type="checkbox"/> Wildlife habitat acquisitions

Section 3. Relationships to other Bonneville projects

Umbrella / sub-proposal relationships. List umbrella project first.

Project #	Project title/description

Other dependent or critically-related projects

Project #	Project title/description	Nature of relationship
9101903	Hungry Horse Mitigation- Watershed Restoration and Monitoring	This project would provide baseline data for watershed restoration projects identified and implemented from this project.
9401002	Hungry Horse Mitigation- Excessive drawdowns	Same as above

Section 4. Objectives, tasks and schedules

Past accomplishments

Year	Accomplishment	Met biological objectives?

Objectives and tasks

Obj 1,2,3	Objective	Task a,b,c	Task
1	Collect reference condition data stratified by geology and Rosgen Channel type	a	Survey 6 streams in the Bob Marshall Wilderness using the R1/R4 survey methodology
		b	Enter data into Columbia River Basin Reach Information Database
2	Disseminate information to land managers	a	Provide data sets to managers to aid in watershed analyses, stream restoration projects, and Forest plan revisions

Objective schedules and costs

Obj #	Start date mm/yyyy	End date mm/yyyy	Measureable biological objective(s)	Milestone	FY2000 Cost %
1	7/2000	10/2000			90.00%
2	10/2000	10/2000			10.00%
				Total	100.00%

Schedule constraints

None

Completion date

Fall 1999

Section 5. Budget

FY99 project budget (BPA obligated):

FY2000 budget by line item

Item	Note	% of total	FY2000
Personnel		% 77	20,000
Fringe benefits		% 10	2,500
Supplies, materials, non-expendable property		% 2	500
Operations & maintenance		% 0	
Capital acquisitions or improvements (e.g. land, buildings, major equip.)		% 0	
NEPA costs		% 0	
Construction-related support		% 0	
PIT tags	# of tags:	% 0	
Travel		% 12	3,000
Indirect costs		% 0	
Subcontractor		% 0	
Other		% 0	
TOTAL BPA FY2000 BUDGET REQUEST			\$26,000

Cost sharing

Organization	Item or service provided	% total project cost (incl. BPA)	Amount (\$)
Flathead N.F.	Training/additional crew	% 28	10,000
		% 0	
		% 0	
		% 0	
Total project cost (including BPA portion)			\$36,000

Outyear costs

	FY2001	FY02	FY03	FY04
Total budget				

Section 6. References

Watershed?	Reference
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<input checked="" type="checkbox"/>	Overton, C. Kerry, McIntyre, J.d.; Armstrong, R.; Whitwell, S.L.; Duncan, K.A. 1995. Users Guide to fish habitat: descriptions that represent natural conditions in the Salmon River Basin, Idaho. Gen. Tech. Rep. Rep. INT-GTR-322. Ogden, UT: USDA, Intermoun
<input checked="" type="checkbox"/>	Overton, C. Kerry, Wollrab, Sherry P.; Roberts, B.C.; Radko, M.A. 1997. R1/R4 fish and fish habitat standard inventory procedures handbook. Gen Tech. Rep. INT-GTR-346. Ogden, UT: USDA, Intermountain Research Station.
<input checked="" type="checkbox"/>	Quigley, Thomas M.; Arbelide, S.J., tech. eds. 1997. An assessment of ecosystem components in the interior Columbia basin and portions of the Klamath and Great Basins. Gen. Tech. Rep. PNW-GTR-405. Portland, OR; USDA, Pacific Northwest Research. 3 vol.
<input type="checkbox"/>	

PART II - NARRATIVE

Section 7. Abstract

Develops reference conditions from various Rosgen channel types to provide baseline data for stream restoration projects and provides a large data set for watershed assessments to determine stream habitat potential. The data will also help detect and characterize land use effects on aquatic habitats across different geologies and channel types which will help fishery managers prioritize stream restoration projects. The ultimate objective is to rebuild native fish stocks by providing a reference set of selected habitat parameters from which watershed restoration projects can be prioritized and then implemented, if need be, to restore the stream reach within the range of natural variability. The 1998 ISRP Review measure V-C.3.1 is specific to tying habitat projects to a watershed assessment. This project is integral to achieving this goal of the ISRP. It provides a baseline to help determine whether a restoration project should even take place based upon whether the stream reach is outside or within the range of natural variability. Data will be collected using the R1/R4 stream survey methodology and will be stored in the Rocky Mountain Research Station's Columbia River Basin Reach Information Database (CRBRID). The success of this project will be measured by the incorporation of the dataset into watershed assessments and stream restoration projects.

Section 8. Project description

a. Technical and/or scientific background

The goal of any watershed assessment is to describe the current condition of an area or more specifically of a stream relative to its potential. In other words, what is the "desired future condition" of the project stream. To answer this question, we must first have an understanding of what the stream's potential is. This is often very difficult to measure because most streams have been impacted through road building, grazing, timber harvest,

etc. We can not go back in time so answers are difficult to come by unless we obtain reference conditions of "pristine" or "unmanaged" streams stratified across similar geologies and similar channel types (Rosgen).

Data on existing conditions of streams is often lacking in many forested portions of the Intermountain West (Quigley 1997). Overton et al. (1995) have described reference conditions for the Salmon River Basin in Idaho. The document provides fishery managers a description of stream characteristics that represent natural conditions in the absence of major human disturbances. Similar data for the Flathead River Basin where Belt series geologies dominate is lacking. Collection of this data will assist managers in determining templates for stream restoration projects, prioritizing stream restoration projects, assessing cumulative impacts to watersheds, and establishing quantitative management objectives.

b. Rationale and significance to Regional Programs

The 1998 ISRP Review measure V-C.3.1 is specific to tying habitat projects to a watershed assessment. This project is integral to achieving this goal of the ISRP. It provides a baseline to help determine whether a restoration project should even take place based upon whether the stream channel is outside or within the range of natural variability. Furthermore, this project is consistent with the Council's July 23, 1998 discussion to gather watershed assessment information appropriately balanced with restoration work. Lastly, The ISRP and the Interior Columbia Basin Ecosystem Management Project (ICBEMP) describe a standard procedure for watershed analysis which is documented in the Ecosystem Analysis at the Watershed Scale: Federal Guide for Watershed Analysis. Collection of reference conditions which is Step 4 in the 6 step process is integral to any watershed analysis as described in this document.

c. Relationships to other projects

This project will collect data from the South Fork Flathead River drainage that will serve as a template for future habitat improvement and restoration projects by providing baseline reference conditions stratified by geology and Rosgen channel types. Many of the projects from Hungry Horse Mitigation occur in the South Fork Flathead, therefore, a reference data set is needed to assist these projects. Once inventory data is collected on a potential project stream, it will assist in determining if a project is warranted and if so will provide a range of conditions that that restoration project should attempt to achieve.

This project complements Overton et al. (1995) work in the Salmon River Basin and ICBEMP. The work in the Salmon River Basin provides a process for this work but the information collected from that work is not useable in the Flathead because of the different geologies. The Salmon consists primarily of the Idaho Batholith which is highly granitic while the Flathead geology is metasedimentary. Information collected from the Flathead will be inputted into the Rocky Mountain Research Stations Columbia River Basin Reach Information Database (CRBRID) to expand the record so that other

managers will have access to assist them in watershed analyses. This project will receive assistance from Kerry Overton at the Rocky Mountain Research Station.

d. Project history (for ongoing projects)

(Replace this text with your response in paragraph form)

e. Proposal objectives

Objectives are to collect reference condition information stratified by geology and channel type on 6 streams in the Bob Marshall Wilderness. The data will assist managers in determining templates for stream restoration projects, prioritizing stream restoration projects, assessing cumulative impacts to watersheds, and establishing quantitative management objectives that can be incorporated into Forest Plans.

f. Methods

The procedure will follow the Forest Service's R1/R4 Fish and Fish Habitat Standard Inventory Procedures Handbook (Overton et al. 1997). Field collected and calculated variables will consist of the following:

Habitat type dimensions- Length and wetted width dimensions will be recorded for each discrete habitat type, i.e. pool, rifle, run and formative feature will be recorded.

Surface fines- Percent surface fines (<6mm) are ocularly estimated and recorded for scour pool tails and low gradient riffles.

Substrate composition- Measured with a Wolman pebble count in low gradient riffles and scour pool tailouts.

Large woody debris frequency- Single pieces (3m in length & 0.1m in diameter) and root wads are recorded at each habitat unit.

Bank stability- The amount of stable bank on each side of the stream is estimated at each habitat unit.

From this data, pool frequencies, habitat type area and volumes, and width/depth ratios can be calculated.

Data will be stored in the Columbia River Basin Reach Information Database (CRBRID) for easy retrieval by multiple users. Objective 2 will be accomplished by providing a published data set to managers.

g. Facilities and equipment

The Flathead National Forest and Montana Dept. of Fish, Wildlife, & Parks have office and field equipment, i.e. computers, software, survey equipment to accomplish this project. No special purchases are required.

h. Budget

The budget funds 2 2-person crews for 2 months plus backcountry per diem and 1 vehicle. The Flathead National Forest is a cost sharing partner contributing \$10,000 in FY99 to survey 2 streams in the Bob Marshall Wilderness.

Section 9. Key personnel

Vitae

Pat Van Eimeren
Fisheries Biologist
Flathead National Forest

B.S.- University of Wisconsin-Stevens Point (Fisheries Science)

M.S.- New Mexico State University (Fisheries Science)

1 year United States Fish & Wildlife Service (Grand Junction, CO)

11 years United States Forest Service (1 yr. Baker, OR; 3 yrs. Forks, WA; 7 yrs. Kalispell, MT)

-Successfully identified and designed watershed restoration and fisheries projects (i.e. road reclamation, large woody debris additions, fish passage, erosion control, stream channel restoration, and fishing access).

-Prepared proposals, secured funding, and developed partnerships with National Fish and Wildlife, National Forest Foundation, Trout Unlimited, Plum Creek Timber Company, and Fish America Foundation.

-Extensive experience with stream surveys and assessment methods (Rosgen channel classification, R1/R4 survey methodology, and Hankin & Reeves methodology).

-10 years experience with bull trout, westslope cutthroat trout, steelhead, rainbow trout, coho, and chinook.

-Extensive experience assessing affects of raod construction, timber harvest, cattle grazing, and other management activities.

-Thorough working knowledge and training in the Endangered Species Act.

-Experience in contentious, collaborative community resource management projects.

* Responsibilities for this project include: training and oversight.

Brian Marotz
Fisheries Program Officer
Montana Department of Fish, Wildlife, & Parks

Education	<p>Master of Science- Fisheries Management Louisiana State University- Baton Rouge, LA Estuarine Biology</p> <p>15 credits: Gulf Coast Research Institute Ocean Springs, MS Marine Science</p> <p>Bachelor of Science- Biology (Aquatic Sciences) University of Wisconsin- Stevens Point, WI Freshwater Biology</p> <p>16 credits: S.E.A. Semester at Sea, Boston University Woods Hole, MA Marine Biology</p>
Professional	<p>1991-Present Fisheries Program Officer, MDFWP experienceDuties: Supervise Special Projects Office, Hydropower Mitigation, Kootenai River IFIM project.</p> <p>1989-1991 Fisheries Biologist, MDFWP Duties: Hungry Horse Reservoir research, Develop Hungry Horse Mitigation Program, Computer Modeling Flathead and Kootenai Drainages, Develop Integrated Rule Curves for Montana.</p> <p>1985-1989 Fisheries Biologist, MDFWP Duties: Libby Reservoir Research , Kootenai Instream Flow Project, Computer Modeling Flathead and Kootenai Drainages, Develop Integrated Rule Curves for Montana.</p> <p>1984-1985 Research Associate, Louisiana State University Duties: Estuarine Research to control salt water encroachment to estuarine marsh on the Sabine NWR. Developed operating plan for water control structures to allow mitigation of catadromous fish and crustaceans.</p>
Awards	<p>1994 Governor's Award for Excellence in Performance as an Employee of the State of Montana.</p>

1994 Director's Award for Excellence as an Employee of Montana Fish,
Wildlife, & Parks.

1989 Certified Fisheries Scientist
American Fisheries Society

Section 10. Information/technology transfer

This information will be available in a region wide data base as mentioned above and will serve as baseline data to revise the Flathead National Forest Plan fisheries standards. In addition, other forests and agencies will have access via the database.

Congratulations!